DETAILED ACTION

Applicant's arguments with respect to claims 1-3, 5, 7, 8, & 10-14 have been considered but are moot in view of the new ground(s) of rejection.

The Examiner notes that the finality of the previous office action of 3/30/2007 has been withdrawn in view of reconsideration of the application in review of the Appeal Brief filed 8/17/2007.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 & 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification discloses controlling the throttle in a shutdown position and controlling vehicle electronics including vehicle lights, power windows and seat controls and motors, audio and video systems, and air-conditioning systems (See specification

Paragraph 26), however does not disclose the broader limitation of all "non-idle air valve related functions". The Examiner further notes that the specification fails to recite what is meant by the term "non-idle air valve related functions".

Furthermore, claim 1 also recites a "non-hybrid vehicle" which is not disclosed in the specification. The specification and claims fail to provide any description of what is considered a "hybrid vehicle" nor does the specification mention any limitation at all in regard to the type of vehicle used or limiting it's use to a "combustion engine".

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to Claim 1

- The specification fails to describe the term "non-idle air valve related function". The term "non-idle air valve related function" is not one ordinarily used in the art. The term "non-idle air valve related function" will be examined as best understood to mean any function other than the systems normal idle air flow position.

- Claim 1 recites the system limited to "non-hybrid" vehicles and an further limited to an "internal combustion engine", neither limitations being provided in the specification or the original claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 10, 13, & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slopsema et al. (US 2002/0179031 A1) and Malik (US 4,364,343).

Slopsema et al. (hereinafter referred to as Slopsema) teaches:

In regard to Claim 1

- A vehicle shutdown system for a non-hybrid vehicle having an internal combustion engine (See Paragraph 10).
- An ignition enabling device (32) with an on and off state which enables ignition of the engine (See Figures 1 and 2 & Paragraph 11).
- An engine controller (20) having a plurality of functions (See Paragraph 13) and being coupled to the ignition enabling device (32) (See Figure 1).

- The engine controller (20) temporarily maintaining operation of at least a portion of the controller functions when the ignition enabling device is switched to the an off state, the controller functions comprising a non-idle air valve related function, read on by step (56) of Figure 2 in which the throttle is adjusted to substantially reduce airflow (See Paragraphs 15-17).

Slopsema fail to teach a switch coupled to the ignition-enabling device and a fuel supply system wherein the controller also disables the fuel supply system upon the ignition enabling device being switched off.

Malik teaches a switch coupled to a controller (110), read on by the manual shutdown switch (139) (See Column 6, lines 54-63) and Figure 1 and a fuel supply system disabled by a controller when the ignition is switched off (See Column 8, Line 67 to Column 9, Line 25 and Column 7, Lines 25-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the switch and fuel supply disabling system taught by Malik into the vehicle shutdown system taught by Slopsema. The motivation would have been to reduce fuel consumption and emissions (See Malik, Column 1, Lines 1-25).

Slopsema further teach:

In regard to Claims 2 & 13

- The plurality of functions comprising at least drive-by-wire function (See Paragraph 5 & Figure 1).

In regard to Claims 3

- A single throttle-controlled device, read on by the throttle (Step 56), the engine controller (20) electronically controlling the non-idle air valve throttle controller device at least temporarily preventing shutdown of electronic throttle control (Step 58) when the ignition-enabling device (32) is switched off (Step 52) (See Figure 2) in order to reduce noise and vibration (shudder) during engine shutdown (See Paragraphs 3-4).

In regard to Claim 10

- The controller adjusts a position of the throttle controlled device to be more air flow restrictive, without closing off the flow of air, than that of said throttle-controlled device in a default position when the ignition-enabling device (32) is switched off (See Paragraphs 15-17).

In regard to Claim 14

- A vehicle shutdown system for a non-hybrid vehicle having an internal combustion engine (See Paragraph 10).
- An ignition enabling device (32) with an on and off state which enables ignition of the engine (See Figures 1 and 2 & Paragraph 11).
- An engine controller (20) having a plurality of functions (See Paragraph 13) and being coupled to the ignition enabling device (32) (See Figure 1).

- The engine controller (20) temporarily maintaining operation of at least a portion of the controller functions when the ignition enabling device is switched to the an off state, the controller functions comprising a non-idle air valve related function, read on by step (56) of Figure 2 in which the throttle is adjusted to substantially reduce airflow (See Paragraphs 15-17).
- A non-idle air valve throttle-controlled device, read on by the throttle (Step 56), the engine controller (20) electronically controlling the non-idle air valve throttle controller device at least temporarily preventing shutdown of electronic throttle control (Step 58) when the ignition-enabling device (32) is switched off (Step 52) (See Figure 2).

Claims 5 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slopsema et al. in view of Malik in further view of Page et al. (US 6,499,455).

In regard to Claim 5

Slopsema teaches the engine controller (20) enabling devices when the ignition enabling device is in an ON state and at least temporarily disabling components when the enabling device is in an OFF state (See Figure 2 & Paragraphs 15-18) but fails to explicitly teach a switch coupled to the controller for performing this function.

Page et al. teaches a drive by wire system utilizing a power switch, relay (58), in which to control an air control valve (42) (See Column 2, Lines 61-65). Page et al. further teaches the switch (58) being closed when the ignition switch is closed and

temporarily preventing disablement of the switch when the ignition switch is turned off (See Column 3, Lines 12-60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the throttle control taught by Page et al. into the vehicle shutdown system taught by Slopsema utilizing a relay and temporarily maintaining the relay in the closed position when the ignition switch is put in the off position. The motivation would have been to provide a control means well known in the art for controlling the air control valve in which Slopsema is silent (See Slopsema, Paragraph 16).

In regard to Claim 7

Slopsema teaches controlling a throttle position (See Paragraph 11) but fails to explicitly teach a throttle position sensor. Page et al. teaches a sensor, read on by circuit (78), that senses the transition of voltage which causes an actuator to adjust or maintain an air control valve at a predetermined open position (See Column 4, Lines 32-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the throttle actuator position sensor taught by Page et al. into the vehicle shutdown system of Slopsema. The motivation would have been to provide a reliable and accurate control means for the throttle not explicitly taught by Slopsema.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Slopsema et al. in view of Malik in further view of Hawkins (US 2004/0262995A1).

Incorporating all arguments above, Slopsema teaches an "ignition status" signal (32) (See Figure 1) but fails to explicitly teach an ignition start key assembly.

Hawkins teaches an ignition start key assembly (5) attached to a controller (62) used to control the engine of a vehicle (See Paragraphs 23-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the ignition start key assembly taught by Hawkins into the vehicle shutdown system of Slopsema. The motivation would have been to secure the ignition from unauthorized use by use of the key and a device well known and utilized in the automobile industry for controlling the ignition of a vehicle.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Slopsema et al. in view of Malik in further view of Fukushima et al. (US 2003/0056753 A1).

Slopsema teaches a throttle adjusted for less than 10 percent of the idle speed flow rate but fails to explicitly teach a throttle angle of 1-2 degrees, approximately 1.5 degrees.

Fukushima et al. (hereinafter referred to as Fukushima) teaches an engine throttle control in which the engine throttle is set to 2 degrees (See Paragraphs 113-115).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to set the throttle position of Slopsema in order to restrict the air flow as desired. The motivation would have been to obtain a desired decrease in air flow as taught by Slopsema and to prevent the valve from sticking (See Fukushima, Paragraph 113).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Slopsema et al. in view of Malik in further view of Bakholdin et al. (US 2002/0157881)

Incorporating all arguments above of the vehicle shutdown system taught by Slopsema et al., Slopsema fails to teach a safety monitor which monitors the states of the system during shutdown.

Bakholdin et al. teaches a safety monitor as part of CPU (332) (See Paragraph 120) in which during shutdown of the engine, the states are monitored for a fault and the system continues to operate unless the fault exceeds a predetermined severity level.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the safety monitor taught by Bakholdin et al. in which to monitor the shut-down taught by Slopsema in which the operational status of the various devices were monitored, as taught by Bakholdin et al.

The motivation would have been to protect the system and it's occupants by identifying dangerous conditions during shutdown.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Cavallari whose telephone number is 571-272-8541. The examiner can normally be reached on Monday-Friday 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571)272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Sherry/
Supervisory Patent Examiner, Art Unit 2836

DJC

December 28, 2007